



# CLEARING THE AIR

## 2019 APCD Workshop Series

Are you curious about the air you breathe, what's in it, and how it's protected?

Join us at our free monthly workshops and get an in-depth look at how we keep the air clean.

FEBRUARY 18	JULY 15
MARCH 18	AUGUST 19
APRIL 15	SEPTEMBER 16
MAY 20	OCTOBER 21
JUNE 17	NOVEMBER 18

6 p.m-7:30 p.m. | Louisville Free Public Library, 301 York St.

For more info, go to [www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)  
(502) 574-6000

# CLEARING THE AIR

## 2019 APCD Workshop Series

---



The [APCD Workshop Series](#) seeks to:

- Increase the community's understanding of Louisville's air and of APCD's many functions
- **EMPOWER** citizens
- Provide a more informal forum for dialogue, Q&A and feedback
- Continue with community engagement efforts

# CLEARING THE AIR

## 2019 APCD Workshop Series

---



Today's workshop seeks to:

1. Discuss environmental justice and its relationship to air toxics in Louisville.
2. Review the STAR Program, its formation and its connection to environmental justice.
3. Share how collaborative efforts between the community and APCD continue to address air toxics in Louisville.


# CLEARING THE AIR

## 2019 APCD Workshop Series

---



### Remember...

- There are **NO** silly questions
- Public Participation = 
- Interactive/informal workshop
  - Ask questions as they come to mind
  - Feedback? Email [Clearingtheair@louisvilleky.gov](mailto:Clearingtheair@louisvilleky.gov)



# The STAR Program & Environmental Justice

Air Pollution Control District  
11/18/2019



# Roadmap

- **Environmental Justice and Air Toxics in Louisville**
- Louisville's STAR Program
- Current Status
- Continued Efforts



# What is Environmental Justice (EJ)?

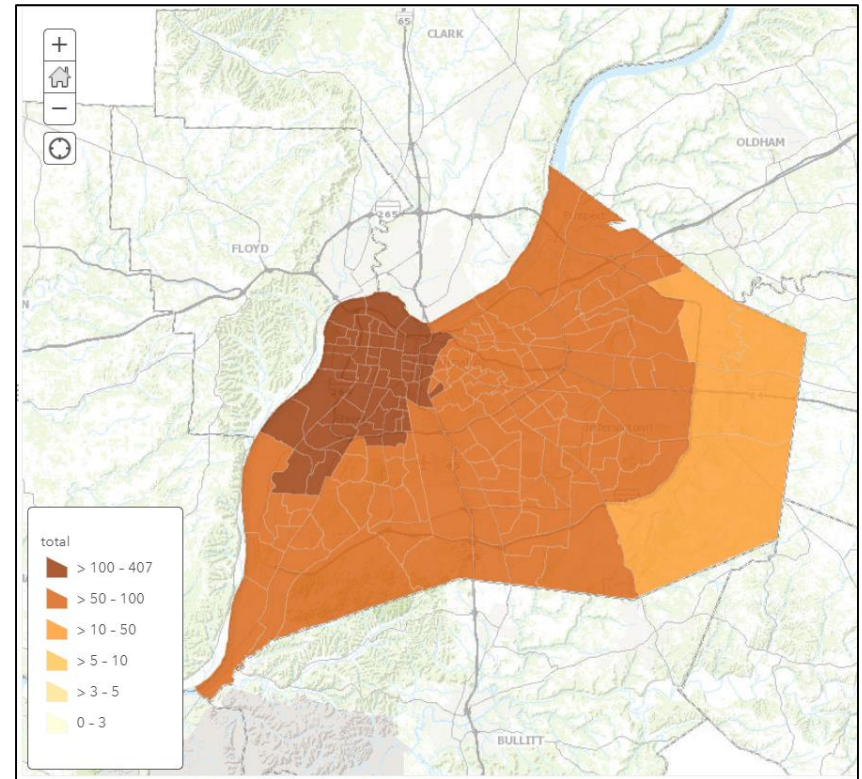
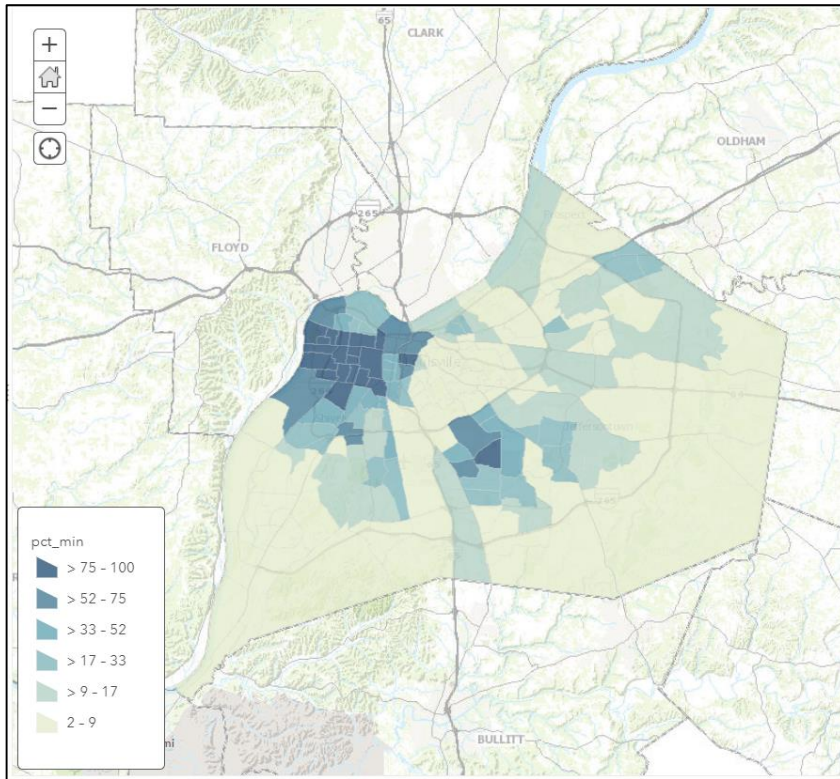
- The **fair treatment and meaningful involvement of all people** regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
- It's achieved when **everyone** enjoys the same degree of protection from environmental and health hazards **and** equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

- [U.S. Environmental Protection Agency](#)



# EJ in Louisville: Air Toxics

2000 Census Percent Minority v 2005 National Air Toxics  
Assessment, All Sources

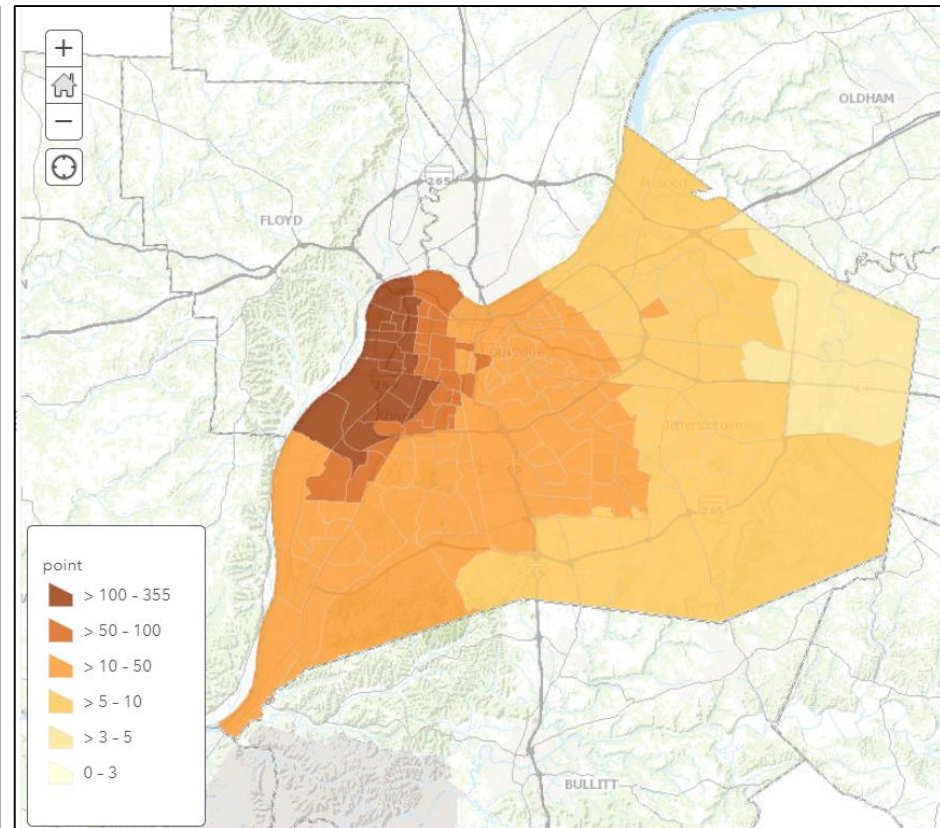
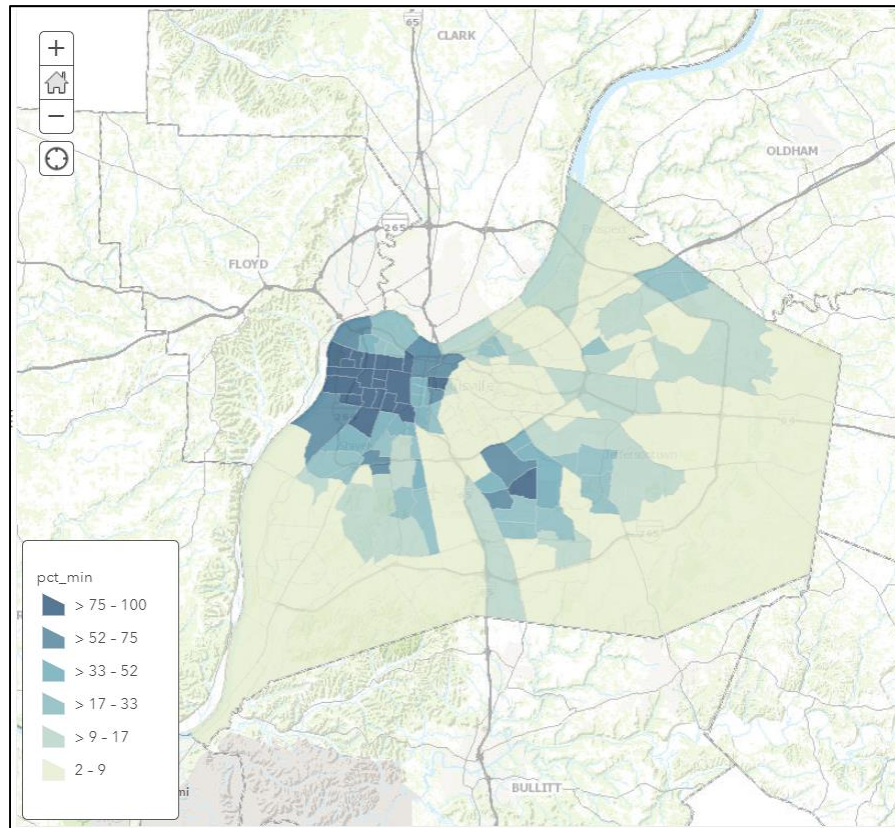


Data sourced from the U.S. Census Bureau and the [National Air Toxics Assessment \(NATA\)](#)



# EJ In Louisville: Air Toxics

2000 Census Percent Minority v 2005 NATA Risk (in a million),  
Point Sources



Data sourced from U.S. Census Bureau and the [National Air Toxics Assessment \(NATA\)](#) data tools.

# What are Air Toxics?

- Air toxics are...
  - Hazardous Air Pollutants (HAPs)
    - Pollutants known/suspected to cause cancer or other serious health effects
  - Emitted from a variety of sources
    - *E.g.* cars, trucks buses, factories refineries, power plants, etc.
    - Can also come from natural sources (*e.g.* forest fires and volcanic eruptions)
- Exposure can occur in many ways
  - *E.g.* Breathing contaminated air, eating contaminated food products

# Air Toxics: Health Effects

Reproductive

Cardiovascular  
Disease

Developmental

Respiratory

Cancer

Neurological

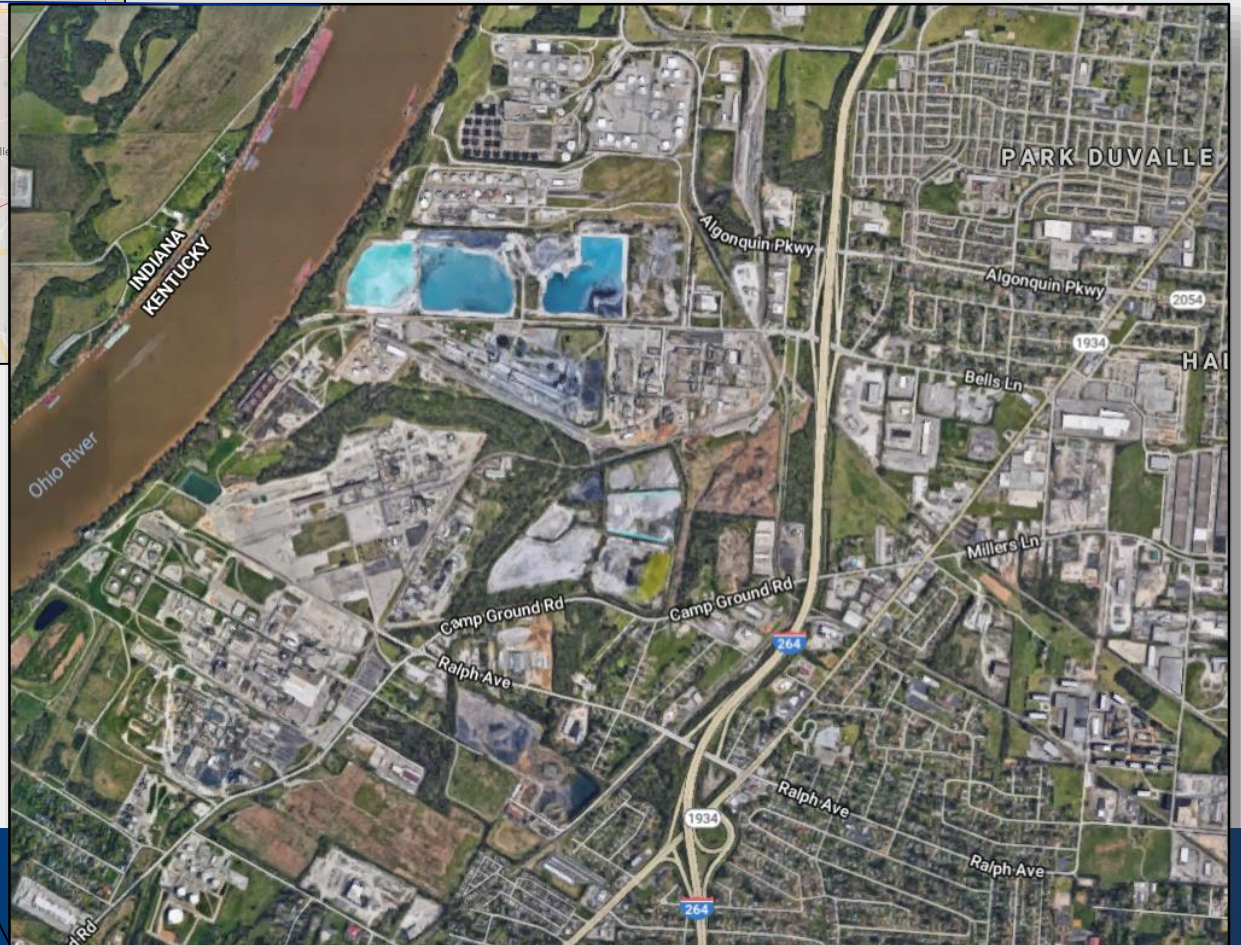
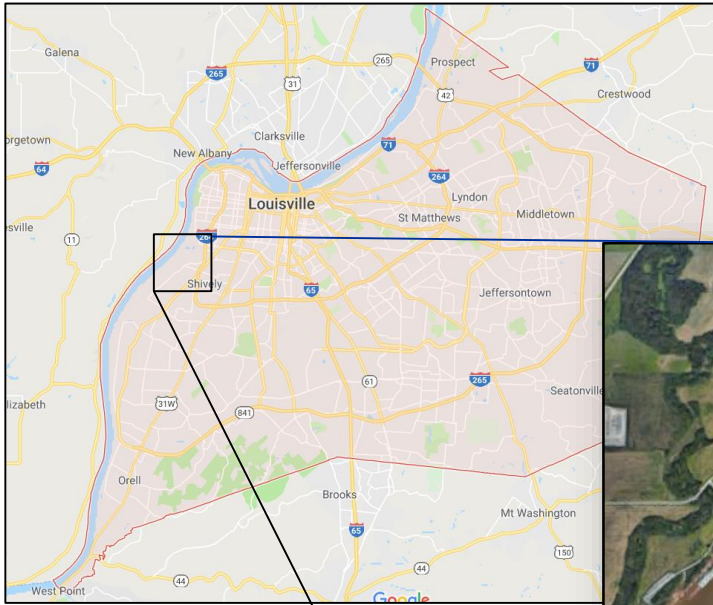
# Rubbertown: In the beginning...

- Industrial area located in West Louisville, KY
- **1918** – Formation of the Standard Oil Refinery; the facility set the stage for future industry in the area
- **World War II (1939-1945)** – West Louisville industrial area starts producing synthetic rubber for tires and other key components used during the war; area now called “Rubbertown”



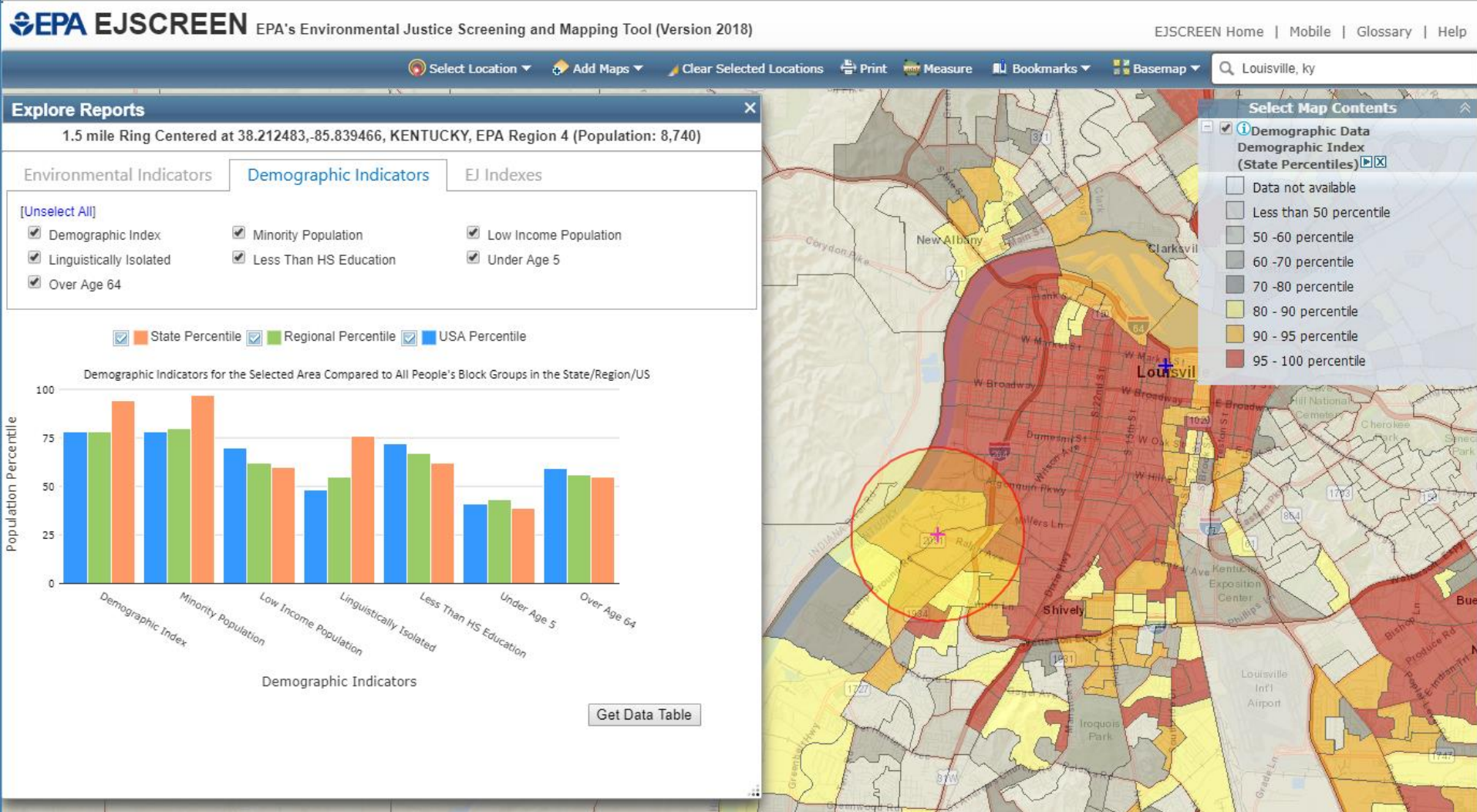


# Rubbertown: Today





# Rubbertown: Demographics





# Why is it important to recognize areas of EJ concern?

- To address issues related to public health, equity, social justice, environmental harms, etc. that disproportionately overburden our communities
- To continue fostering collaborations that will raise awareness around EJ
- To promote public participation in community decision-making
- To build communities where *all* people can achieve their full potential

# West Louisville Air Toxics Study (WLATS)

- 1-year monitoring study (April 2000 to April 2001)
- **Study conducted and selected by the community**
- Monitored for:
  - 83 Volatile organic Compounds (VOCs)
  - 63 Semi-VOCs
  - Formaldehyde, HCl, HF
  - 20 metals
- Results found:
  - 17 carcinogens with risk > than one in a million ( $1 \times 10^{-6}$ )

# EPA Relative Risk Screening Assessment

- Conducted by the U.S. EPA Region 4
- Released the toxics characterization report during the WLATS study
- Assessment evaluated 736 counties in 8 southeast (KY, TN, GA, NC, SC, FL, AL, MS) states
- Jefferson County was the number one county in risk of exposure to toxic air pollutants in the 8 southeast states



# Toxics Release Inventory (TRI) Program

- Created by [EPCRA](#) (Section 313) in 1986
- Tracks the management of certain toxic chemicals that **may pose a threat to human health and the environment**
- U.S. facilities ***must*** report annually if:
  - In certain industries
  - > 10 FTEs
  - 100/10,000/25,000 lb. thresholds
- Report excess emissions releases to air, water, & land

# National Air Toxics Assessment (NATA)

- Periodic national modeling of outdoor air toxics from all sources (2005, 2011, 2014)
- Designed to help reduce toxic air pollution and build on the large emissions cuts achieved in the United States since 1990.
- A screening tool for state, local and tribal air agencies

# Roadmap

- Environmental Justice and Air Toxics in Louisville
- **Louisville's STAR Program**
- Current Status
- Continued Efforts





# The Clean Air Act (CAA) and Air Toxics

- Hazardous Air Pollutants (HAPs)
- The Clean Air Act (CAA) requires EPA to regulate “toxic air pollutants...from large industrial facilities in two phases”:
  - Phase 1: “Technology-based” approach
  - Phase 2: “Risk-based” approach

# STAR Program Development

A regulatory program to reduce harmful contaminants in the air we breathe, to better protect the health of our citizens, and enhance the quality of life.



# STAR Program Timeline

**1996 - 2000**

WJCCTF formed;  
WJCCTF begins  
hosting Monthly  
Meetings

**Sept.  
2004**

First  
Draft  
STAR  
Program

**July  
2005**

Adopted  
STAR  
Program

**2000 -  
2003**

West  
Louisville  
Air Toxics  
Study

**Jan.  
2005**

Proposed  
STAR  
Program

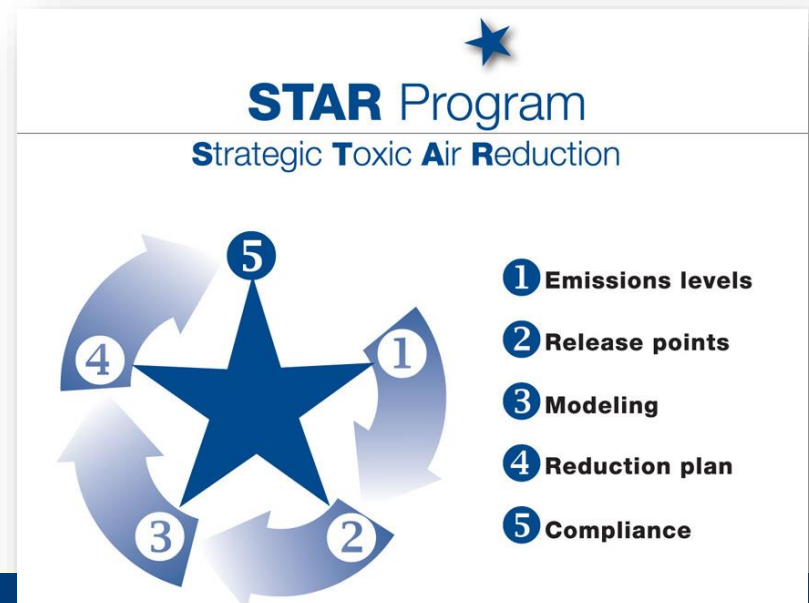
**2005 -  
Present**

Implementation

# STAR Program Highlights

## The STAR Program

1. Provides a framework for determining the environmental acceptability of toxics
2. Requires companies to assess and address air toxics emissions
3. Requires APCD to assess and address other sources toxic emissions



# Community Involvement

## BEFORE the adoption of STAR

- Multiple community meetings and public forums (**over 50**) held to discuss the STAR Program & the draft regulations
  - Monthly presentations by EPA, local industries, local agencies, community groups and citizens/Rubbertown residents
- Built consensus on key issues
  - *E.g.* location of monitoring sites, target level risks, pollutants of concern
- Opportunities for public comment



# Community Involvement

## AFTER the adoption of STAR...

- Stakeholder Groups
  - STAR Implementation Advisory Group (2005 – 2007)
    - Reviewed “nuts and bolts” of the newly implemented STAR Program
  - [STAR Regulation 5.30 Stakeholder Group](#) (2005 – 2007)
    - Developed, reviewed and commented on, the “Report” assessing the risk to human health and welfare and the “Plan of Action” to reduce risk from “smaller sources” emitting toxic emissions throughout the community
  - STAR Advisory Group





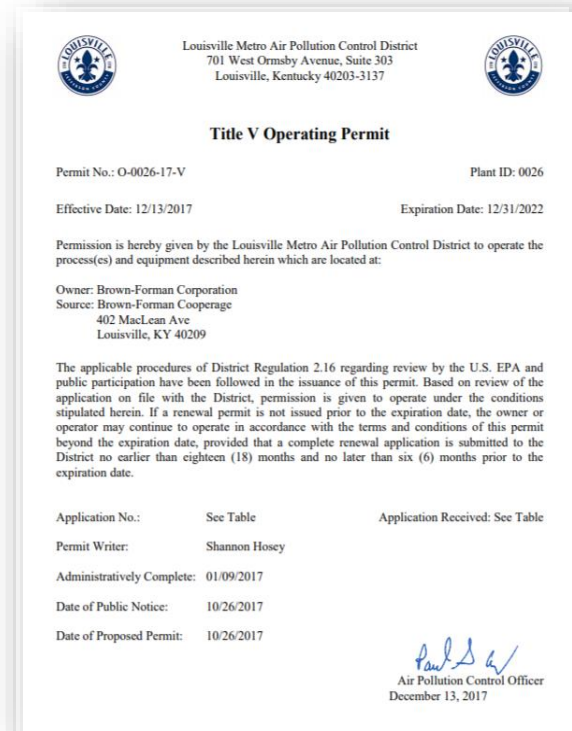
# What toxic chemicals are regulated under STAR?

## Toxic Air Contaminants (TACs)

- Category 1 – 18 identified from the West Louisville Air Toxics Study (WLATS)
- Category 2 – 19 identified Risk Screening Environmental Indicators (EPA-4 ATRRSA)
- Category 3 – Urban Air Toxics not included under Category 1 or 2
- Category 4 – Remaining Hazardous Air Pollutants (HAPs)

# What sources are regulated under the STAR Program?

- All Title V
- Larger FEDOOPs
- General Duty allows for review of any source



The image shows a 'Title V Operating Permit' issued by the Louisville Metro Air Pollution Control District. The permit is for Brown-Forman Corporation, located at 402 MacLean Ave, Louisville, KY 40209. It includes details such as Permit No. O-0026-17-V, Plant ID: 0026, Effective Date: 12/13/2017, and Expiration Date: 12/31/2022. The permit is signed by the Air Pollution Control Officer on December 13, 2017.

Louisville Metro Air Pollution Control District  
701 West Ormsby Avenue, Suite 303  
Louisville, Kentucky 40203-3137

**Title V Operating Permit**

Permit No.: O-0026-17-V Plant ID: 0026

Effective Date: 12/13/2017 Expiration Date: 12/31/2022

Permission is hereby given by the Louisville Metro Air Pollution Control District to operate the process(es) and equipment described herein which are located at:

Owner: Brown-Forman Corporation  
Source: Brown-Forman Cooperage  
402 MacLean Ave  
Louisville, KY 40209

The applicable procedures of District Regulation 2.16 regarding review by the U.S. EPA and public participation have been followed in the issuance of this permit. Based on review of the application on file with the District, permission is given to operate under the conditions stipulated herein. If a renewal permit is not issued prior to the expiration date, the owner or operator may continue to operate in accordance with the terms and conditions of this permit beyond the expiration date, provided that a complete renewal application is submitted to the District no earlier than eighteen (18) months and no later than six (6) months prior to the expiration date.

Application No.: See Table Application Received: See Table

Permit Writer: Shannon Hosey

Administratively Complete: 01/09/2017

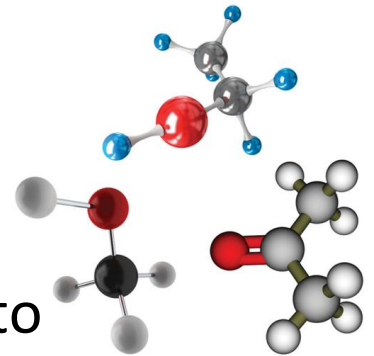
Date of Public Notice: 10/26/2017

Date of Proposed Permit: 10/26/2017

*Paul D. [Signature]*  
Air Pollution Control Officer  
December 13, 2017

# The STAR Program

- What's the science?
  - APCD relies upon toxicologists and other researchers to establish risk levels of each chemical
  - Benchmark Ambient Concentration (BAC)
- What's the permitting process?
  - EPA approved dispersion models are used to estimate maximum concentrations
  - Compared to BAC – "magic number"
    - Ratio is Cancer Risk or Hazard Quotient
  - Set compliant emission rate as limit in permit
  - Develop compliance demonstration methods

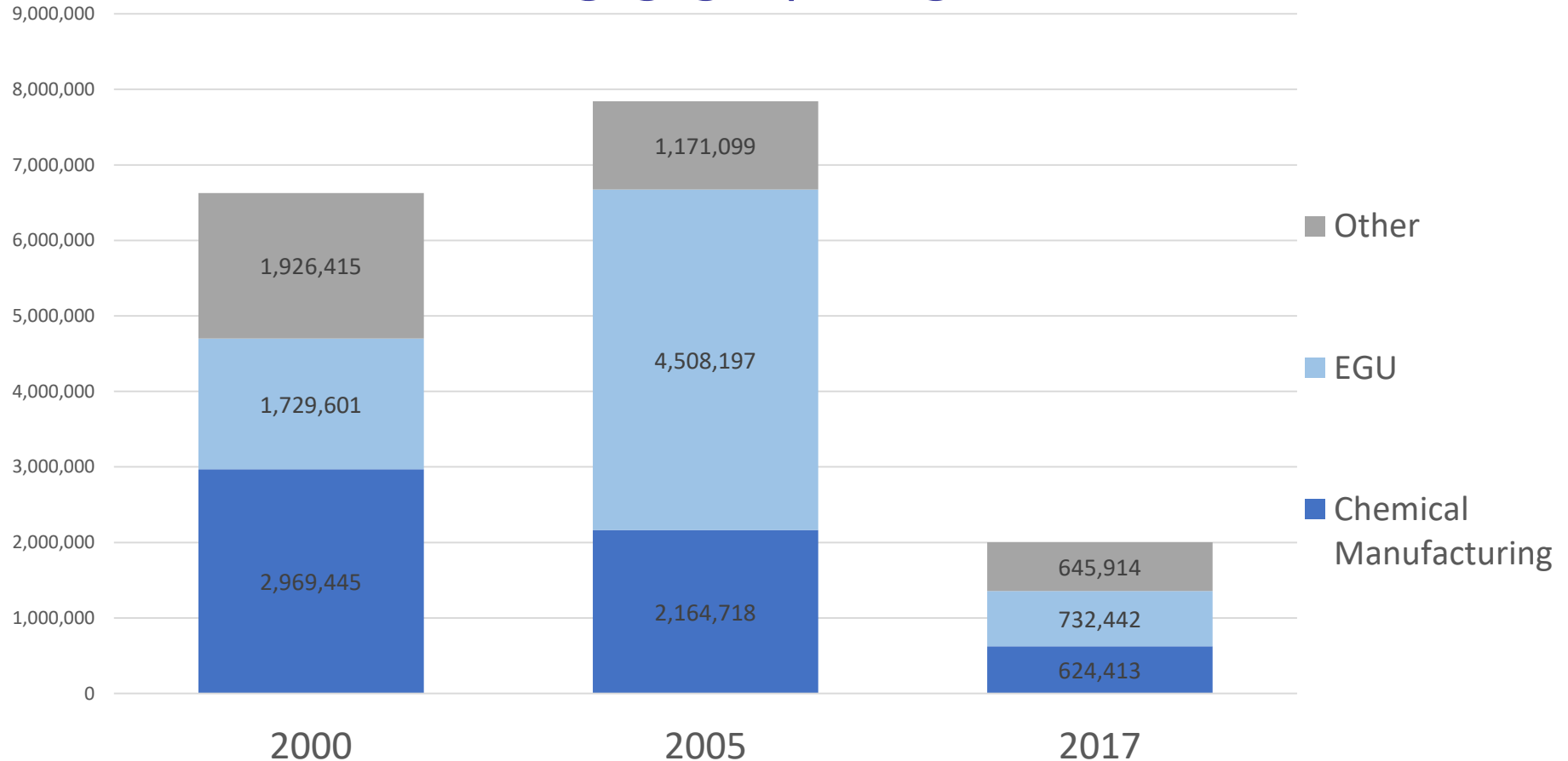


# Roadmap

- Environmental Justice and Air Toxics in Louisville
- Louisville's STAR Program
- **Current Status**
- Continued Efforts



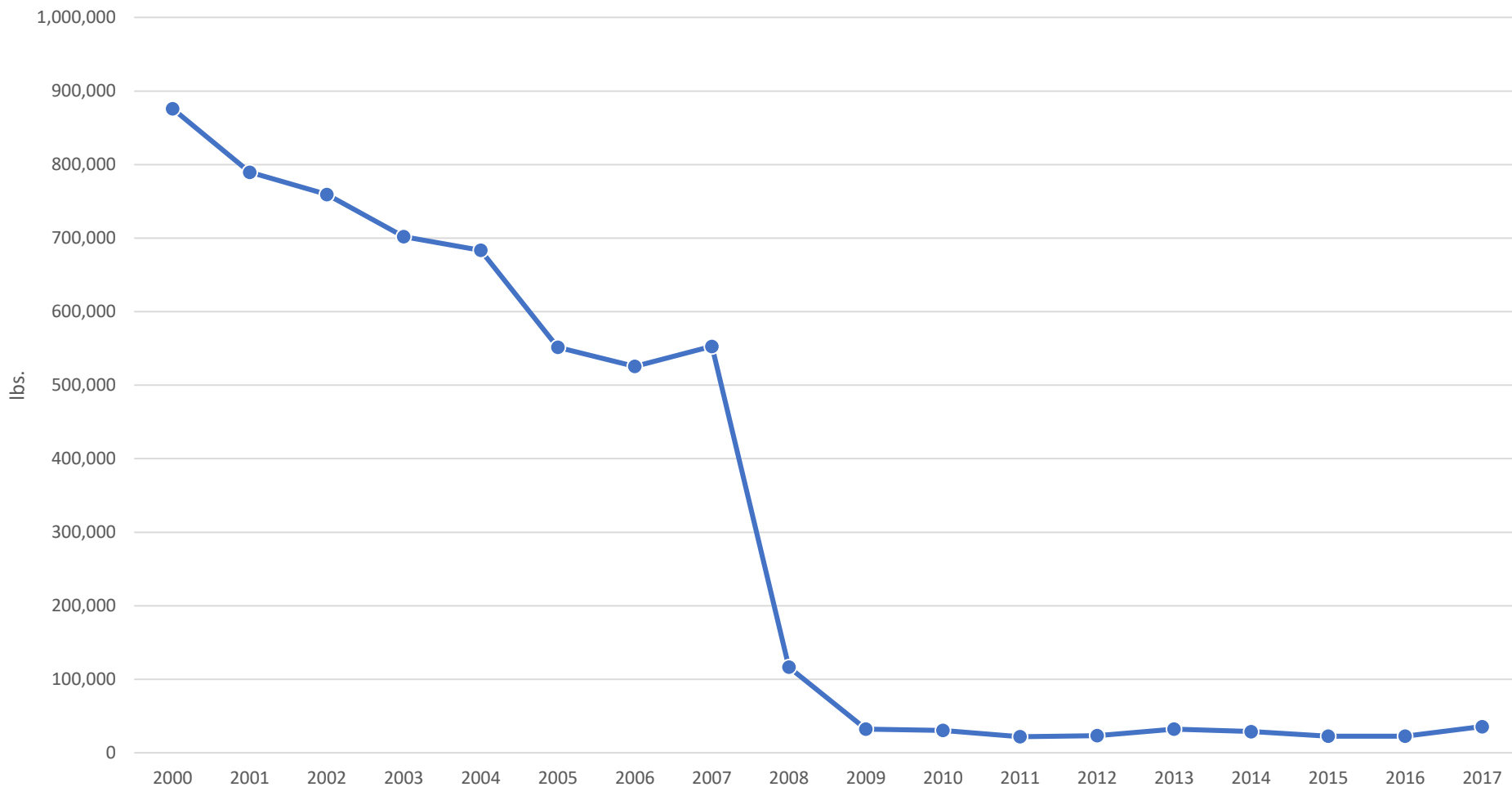
# Total Air Toxics 2000 v 2017



Source: EPA Toxics Release Inventory

# Louisville Toxic Air Emissions 2000-2017

Category 1 TAC Emissions





# National Toxic Air Emissions 2000-2016

2000 – 11<sup>th</sup>

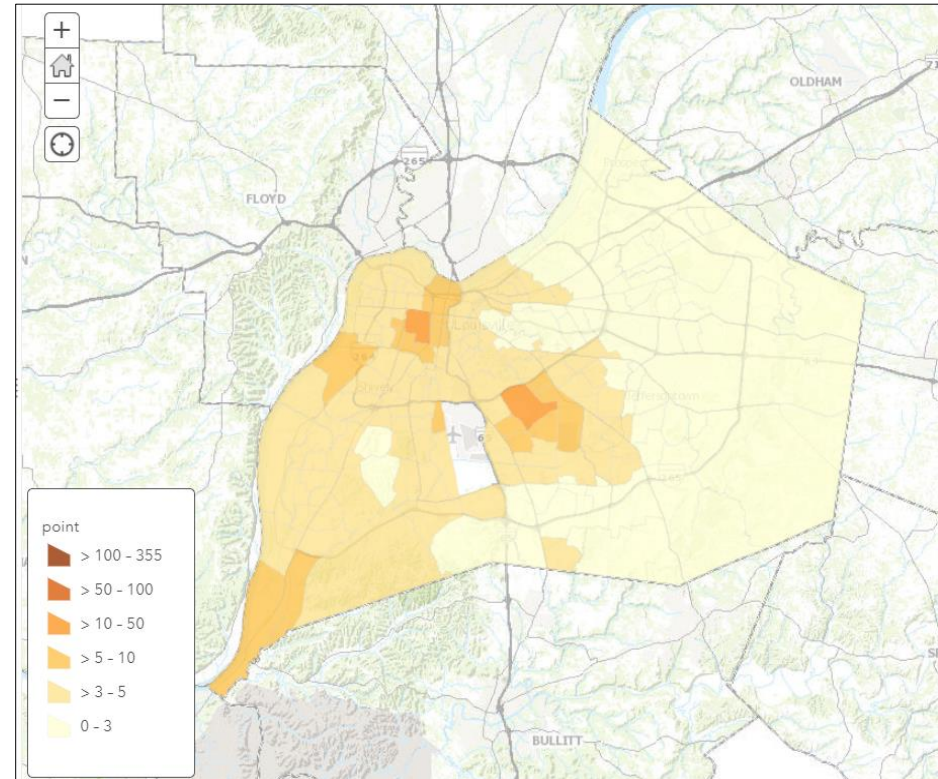
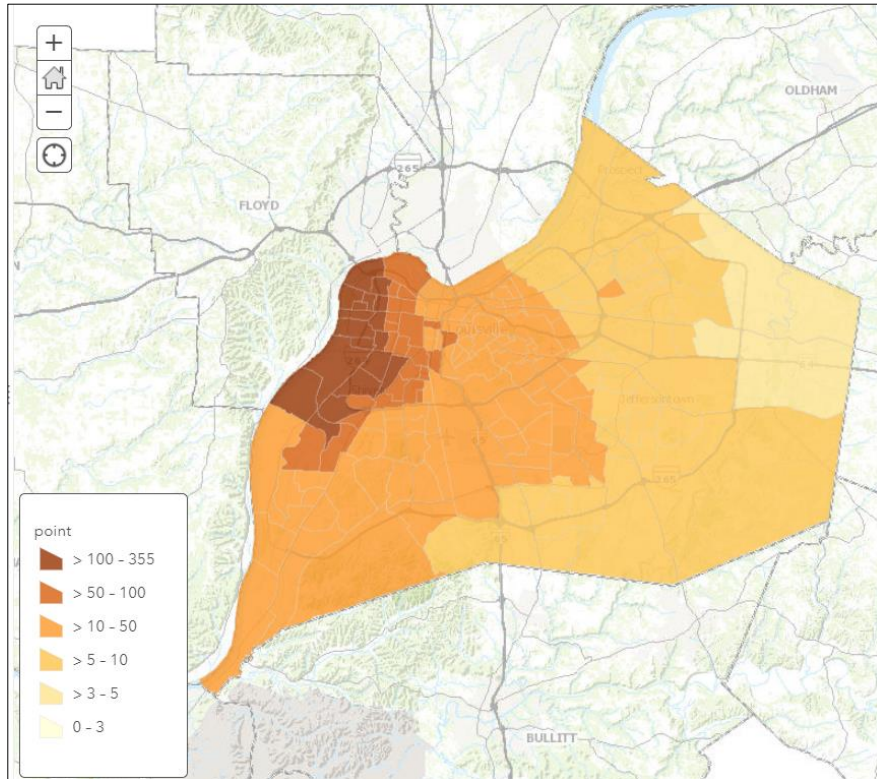
	County	Total Air Releases
1	LEE, MS	3,046,517
2	ELKHART, IN	2,691,389
3	HARRIS, TX	2,160,894
4	ERIE, PA	1,856,482
5	BARCELONETA, PR	1,366,249
6	MONROE, NY	1,322,591
7	GIBSON, TN	1,305,875
8	ALLEN, OH	1,155,452
9	GEORGETOWN, SC	1,139,579
10	LUZERNE, PA	1,085,249
11	JEFFERSON, KY	875,948
12	JEFFERSON, TX	832,067

2016 – 153<sup>rd</sup>

	County	Total Air Releases
1	HARRIS, TX	778,561
2	TUSCARAWAS, OH	714,326
3	HARRISON, IN	587,624
4	JEFFERSON, TX	533,888
5	GEORGETOWN, SC	369,125
6	BRAZORIA, TX	297,720
7	SEDGWICK, KS	289,021
8	CALCASIEU PARISH, LA	286,815
9	ST JOHN THE BAPTIST PARIS, LA	256,927
10	YAUCO, PR	253,992
11	CHATHAM, NC	252,104
12	ASCENSION PARISH, LA	225,733
...	...	...
152	HAMILTON, OH	25,133
153	JEFFERSON, KY	25,086

# Progress to Date: Health Risk

2005 v 2014 National Air Toxics Assessment – Point Sources



[National Air Toxics Assessment \(NATA\)](#)

# Roadmap

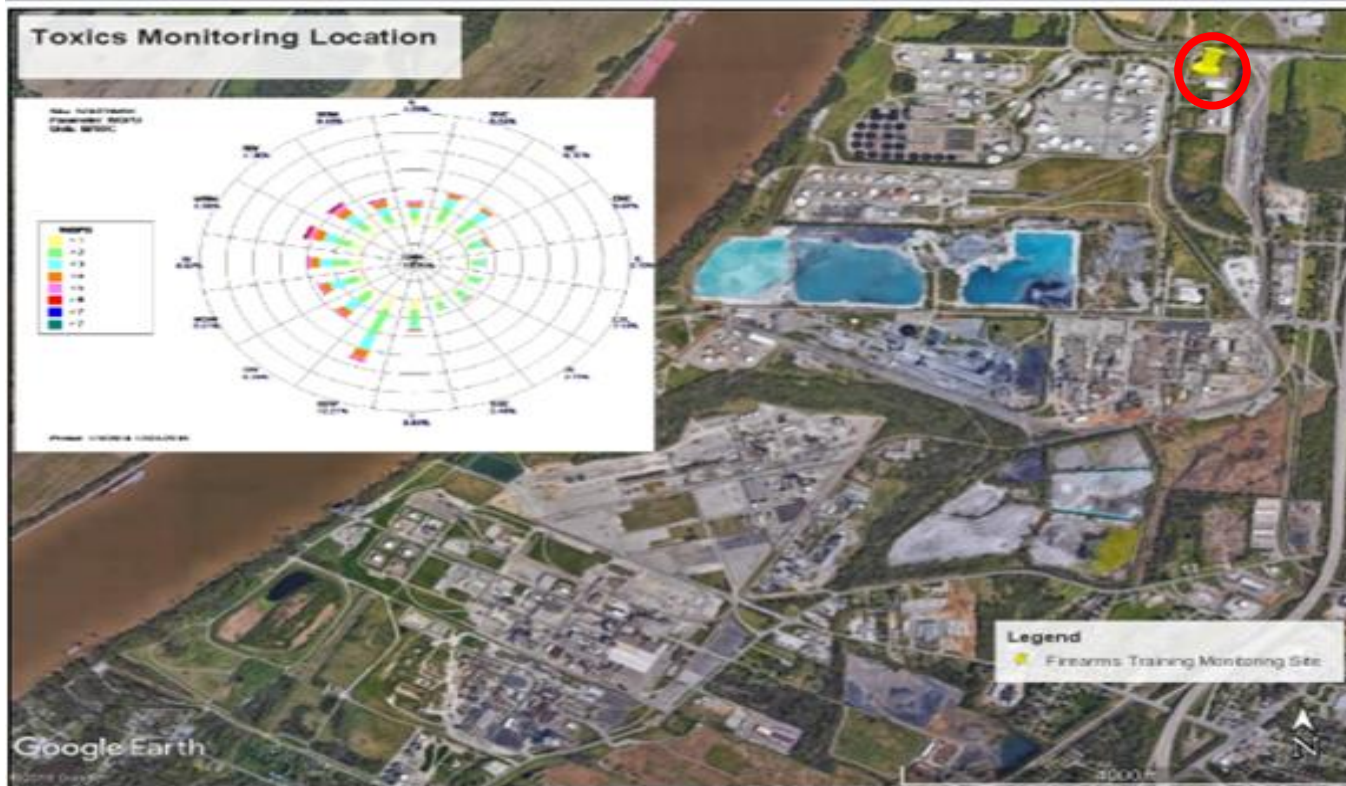
- Environmental Justice and Air Toxics in Louisville
- Louisville's STAR Program
- Current Status
- **Continued Efforts**





# Air Toxics Monitoring

## Firearms Training Air Monitoring Site



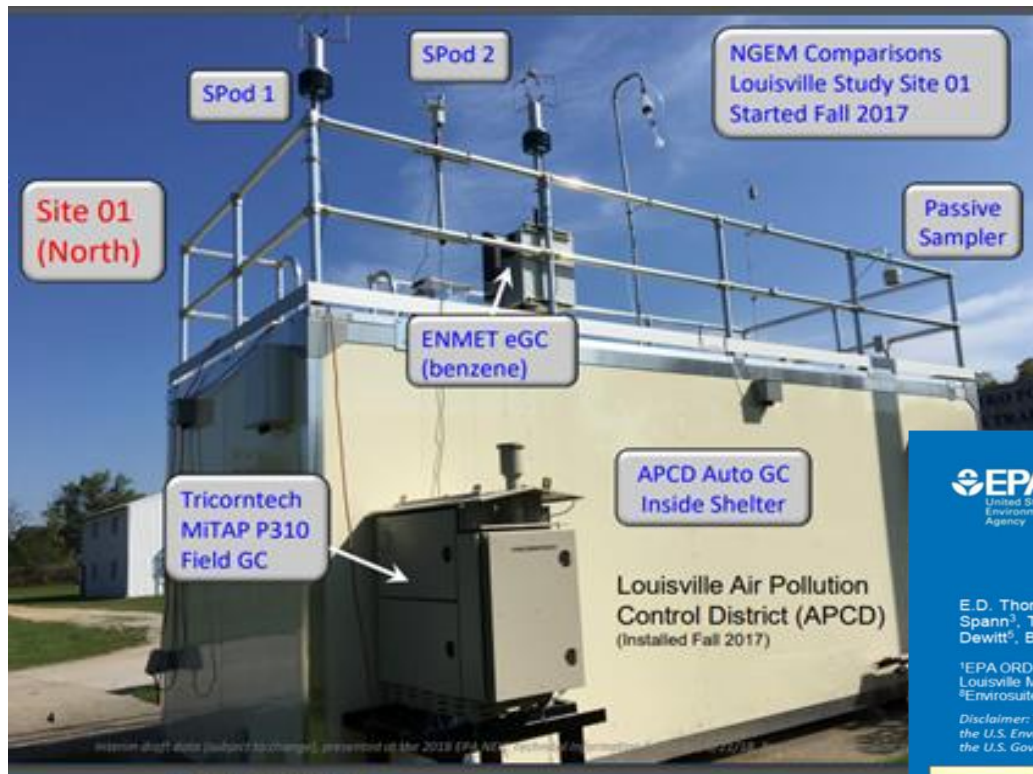
Stay up-to-date on APCD's Air Toxics Monitoring Project at [louisvilleky.gov/government/air-pollution-control-district/epa-air-toxics-monitoring-project-louisville](http://louisvilleky.gov/government/air-pollution-control-district/epa-air-toxics-monitoring-project-louisville)

# What is being monitored?

<u>CAS No.</u>	<u>Compound</u>	<u>TAC No.</u>
107-13-1	Acrylonitrile	1
71-43-2	Benzene	1
75-25-2	Bromoform	1
106-99-0	1,3 Butadiene	1
56-23-5	Carbon tetrachloride	1
67-66-3	Chloroform	1
106-46-7	1,4 Dichlorobenzene	1
75-09-2	Methylene chloride (Dichloromethane)	1

<u>CAS No.</u>	<u>Compound</u>	<u>TAC No.</u>
127-18-4	Perchloroethylene (Tetrachloroethylene)	1
79-01-6	Trichloroethylene	1
75-01-4	Vinyl Chloride	1
108-88-3	Toluene	1
100-41-4	Ethylbenzene	2
108-10-1	Methyl isobutyl ketone (4-Methyl- 2-pentanone)	4
100-42-5	Styrene	4
80-62-6	Methyl methacrylate	4
140-88-5	Ethyl acrylate	4

# Collaborations with EPA: RARE Project

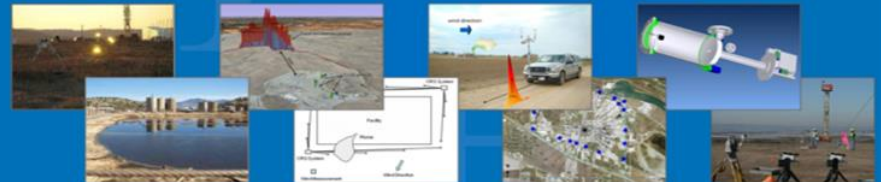


## Air Pollutant Source Investigation using Next Generation Emission Measurements and Models; Early Case Studies of 1,3-Butadiene Emissions in Louisville, KY *NEIC 2018 Tech Summit, Denver CO, August 21, 2018*

E.D. Thoma<sup>1\*</sup>, R. Duvall<sup>1</sup>, I. George<sup>1</sup>, T. Wu<sup>1</sup>, H. Brantley<sup>1\*</sup>, D. Whitaker<sup>2</sup>, K. Oliver<sup>2</sup>, N. Carlton-Carew<sup>3</sup>, J. Spann<sup>3</sup>, T. Bell<sup>3</sup>, P. Deshmukh<sup>4</sup>, J. Gansler<sup>4</sup>, T. Cousett<sup>4</sup>, A. Cooley<sup>5</sup>, S. Gravatte<sup>5</sup>, K. Zimmerman<sup>5</sup>, B. Dewitt<sup>5</sup>, B. Paris<sup>5</sup>, W. Tang<sup>6</sup>, T.K.A. Chou<sup>7</sup>, D. Chung<sup>7</sup>, T. Wu<sup>7</sup>, M. Farquhar<sup>8</sup>, A. Quijano<sup>8</sup>, M. Scholl<sup>8</sup>

<sup>1</sup>EPA ORD NRMRL, RTP, NC; <sup>2</sup>EPA ORD NERL, RTP, NC; <sup>3</sup>EPA Region 4, Atlanta, GA; <sup>4</sup>Jacobs Technology, RTP, NC; <sup>5</sup>Louisville Metro APCD, Louisville, KY; <sup>6</sup>ARA Environmental, RTP, NC; <sup>7</sup>Tricornitech Corporation, Taipei City, Taiwan; <sup>8</sup>EnviroSuite, New South Wales, Australia

*Disclaimer: The views expressed in this presentation are those of the authors and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency (EPA). Any mention of trade names, products, or services does not imply an endorsement by the U.S. Government or the EPA. The EPA does not endorse any commercial products, services, or enterprises.*



Office of Research and Development  
National Risk Management Research Laboratory, Air and Energy Management Division

*Intentional design: data (subject to change), presented at the 2018 EPA NEIC Technical Information Exchange, 8/21/18, for scientific discussion purposes*

NRMRL Fugitive and Area Source Group  
Source and Fenceline Measurements  
Methods and Technology Development

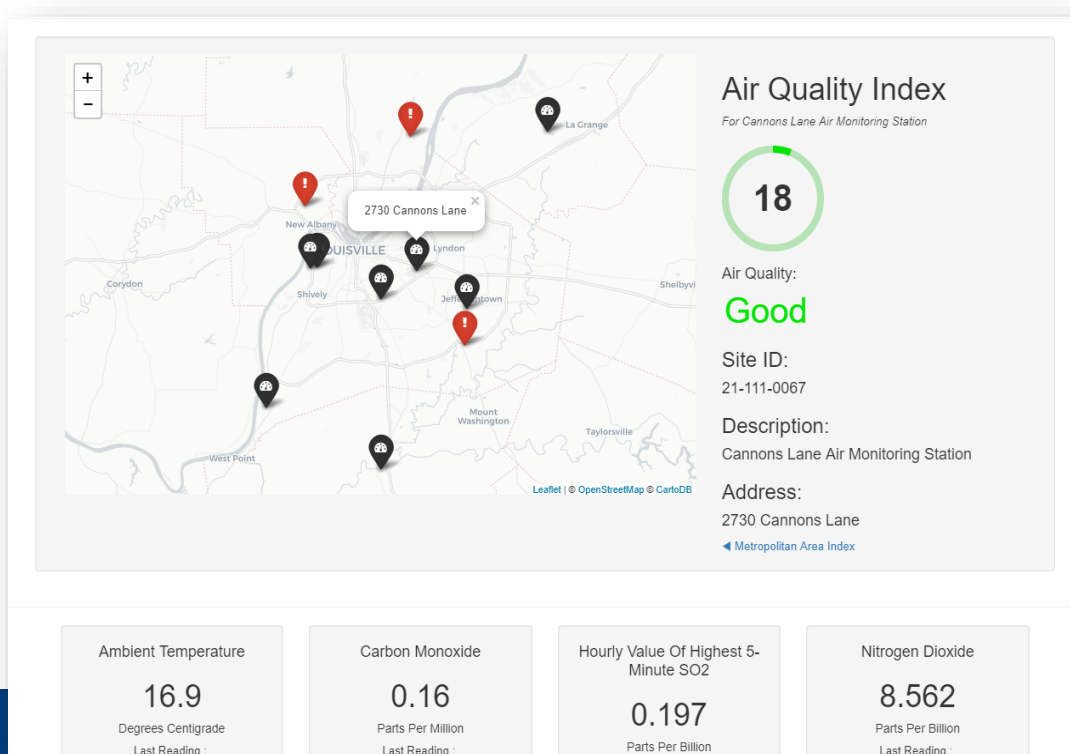
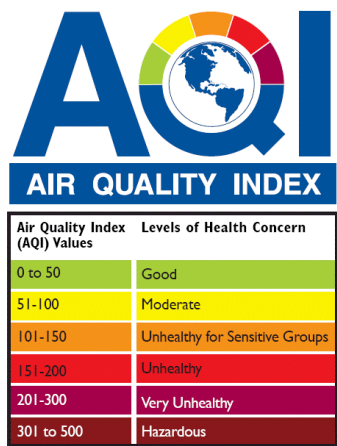
AIR  
POLLUTION  
CONTROL  
DISTRICT





# Louisville Air Watch “2.0”

- Improved access to current air monitoring network data, **including air toxics**
- Improved user interface
- Look-up function for data from previous days

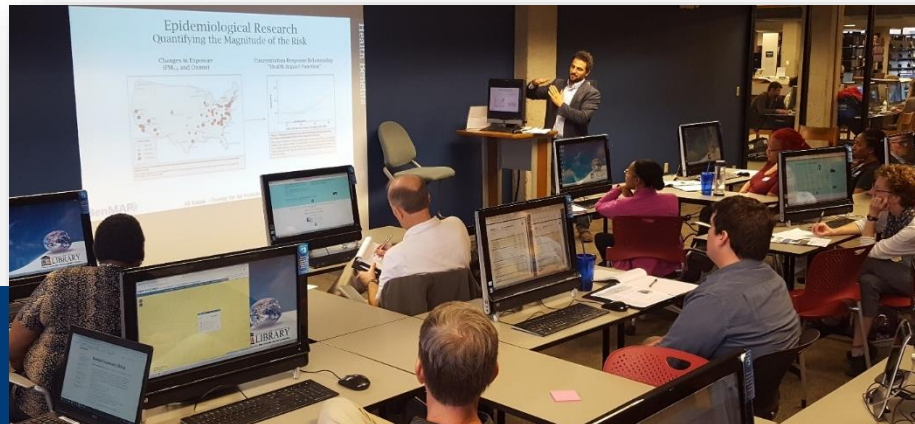


# Clearing the Air Workshop Series

- Educate and further empower Louisville residents
- Provide an accurate picture of Louisville's AQ
- Offer trainings on Understanding Risk, EPA's Toxic Release Inventory (TRI), BenMap and more



AIR POLLUTION  
CONTROL DISTRICT



# Multi-Pollutant Risk-Based AQ Management Strategy Project

Goal(s)	Outcomes
<ul style="list-style-type: none"><li>Evaluate and prioritize control strategies to reduce ozone and come into attainment with NAAQS</li><li>Explore co-benefits of ozone reduction strategies to air toxics and fine particulate emissions</li><li>Use BenMAP to quantify the anticipated health benefits of air quality improvements</li></ul>	<ul style="list-style-type: none"><li>Prioritized emission reduction strategies</li><li>Quantified health outcome improvements and associated benefits</li><li>Stakeholder input</li></ul>



# Other Opportunities

- Environmental Justice Policy
  - Work with community and across LMG to develop a policy that addresses environmental justice issues throughout Louisville Metro
  - EJ Policy development is a strategy included in [\*Resilient Louisville\*](#)
- [GHG Emissions Reduction Plan](#)
  - Explore how actions set forth in the GHG Emissions Reduction Plan can work to help address EJ issues in Louisville Metro communities



October 2019

**Louisville**

Greenhouse Gas Emissions Reduction Plan

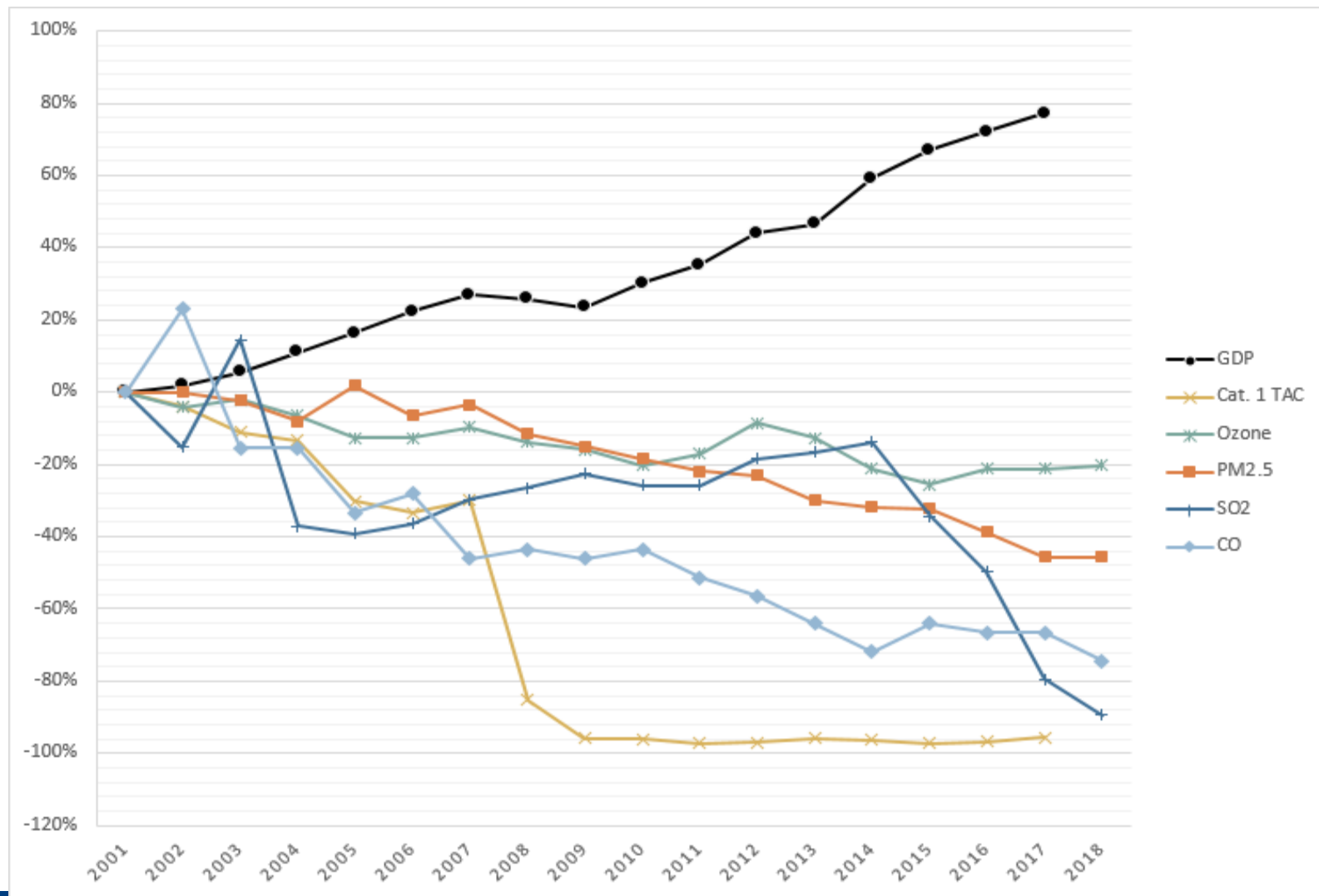
DRAFT prepared for Louisville Metro Government by Stantec Consulting Services, Inc.

# Continuing the Conversation

- Support/create opportunities for **meaningful involvement by all people**.
- Continue offering **transparent and frequent** opportunities for our community to learn about our work.
- Continue highlighting **public participation opportunities** built into our processes, from reg development to implementation to enforcement.
- Work collectively with other LMG departments and agencies to **raise awareness** around EJ in Louisville



# Heading in the right direction...





# Resources

[APCD Open Records Request](#)

[EPA EJSCREEN](#)

[STAR Program](#)

[EPA National Air Toxics  
Assessment](#)

[APCD Clearing the Air Workshop  
Series](#)

[\(NATA\)](#)

[West Jefferson County  
Community Task Force  
\(WJCCTF\)](#)

[EPA Environmental Justice](#)

[EPA Hazardous Air Pollutants](#)

# Resources

[Rubbertown Community  
Advisory Council \(RCAC\)](#)

[EPA Reporting  
EnvironmentViolations](#)

[EPA National Emissions  
Inventory \(NEI\)](#)

[National Environmental Policy Act  
Assist \(NEPAassist\)](#)

[Rubbertown Emergency  
ACTion \(REACT\)](#)

[EPA Enforcement & Compliance  
History Online \(ECHO\)](#)

WEST JEFFERSON COUNTY COMMUNITY TASK FORCE  
&  
NATIONAL ASSOCIATION FOR  
THE ADVANCEMENT OF COLORED PEOPLE  
(NAACP)

DECEMBER 3,  
2019  
8:30 A - 5:00P

# ENVIRONMENTAL JUSTICE CONFERENCE

FOR MORE INFO  
CALL  
502-645-3588

**Theme: Climate Change, Environmental  
Justice - Investing in Our Future**

**Featuring:**

**Jackie Patterson, National Chair  
NAACP Environmental Climate Justice**

SIMMONS COLLEGE OF KENTUCKY  
1000 S. 4TH STREET  
LOUISVILLE, KY 40203

To Register or Become a Sponsor Click [HERE](#)

AIR  
POLLUTION  
CONTROL  
DISTRICT



# Questions?

## Louisville Metro Air Pollution Control District

701 W. Ormsby Ave.

Ste. 303

Louisville, Ky. 40203

(502) 574-6000

[www.louisvilleky.gov/APCD](http://www.louisvilleky.gov/APCD)

Keith H. Talley Sr., Director